# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
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Honolulu, Hawaii 96850

In Reply Refer To:
2011-CPA-0104
2011-CPA-0102

JUL 26 2011

George P. Young, P.E.
U.S. Army Corps of Engineers
Regulatory Branch (CEPOH-EC-R/Watanabe and Seberger)
Honolulu District, Bldg. 230
Fort Shafter, HI 96858

Subject: POH-2011-00158 & POH-2011-00035

Dear Mr. Young:

The U.S. Fish and Wildlife Service (Service) is providing the following recommendations in response to the Nationwide Permit (NWP) Agency Coordination notice, dated July 12, 2011, for maintenance dredging the sand plug at the mouth of Kaelepulu Stream (POH-2011-00158) and the Letter of Permission (LOP) Agency Coordination notice (POH-2010-00035) for the Enchanted Lakes Residents Association Maintenance Dredging Project at Kaelepulu (Enchanted Lake) in Kailua, Oahu, Hawaii, dated July 18, 2011.

Two projects that address the circulation in Kaelepulu pond are being considered separately, under two permitting vehicles. We understand that the Corps is evaluating the projects individually because they are planned to be conducted exclusive of each other, since the maintenance dredging of the opening of the stream has been an ongoing activity for several years and may be authorized for the next 5 years under the NWP. However, the Service is concerned that the potential impacts on the nearshore environment from dredging the sand plug, combined with the impacts of dredging the lake may be more than minimal due to the risk of spreading invasive algal species, specifically, algae of the Genus *Gracilaria (Gracilaria salicornia and G. tikvahiae)*. The Service supports the work going forward, but not without risk analysis and actions taken to reduce invasive algae biomass. The Service notes that although these two projects are occurring at opposite ends of the Kaelepulu pond and stream system, their combined effects are likely to be intertwined. Therefore, we recommend a coordinated approach to impact analysis across the length of this ecosystem.

Regarding the NWP (POH-2011-00158), for dredging the mouth of the stream, we are concerned that when the sand plug is removed, the transport of algae may greatly increase. Although it is likely that the algae continually move from the lake and canal, removing the plug may allow for a larger pulse into Kailua Bay than would otherwise occur. These pulses can present problems

because a concentrated movement of material may deposit algae onto surrounding reef areas in densities that cross a tipping point for algal abundance. We have seen algae in large enough biomass stands in this system to conclude that it will not decrease by natural means, and will instead require mechanical removal.

Regarding the LOP for dredging the pond (POH-2010-00035), the Service is concerned that the applicant has not evaluated the risk associated with increasing pathways for invasive algae species to be moved from lake and to become established in the nearshore habitats in and surrounding Kailua Bay. We acknowledge the difficulty of quantifying or predicting the level of risk associated with the proposed activities, but we believe such an assessment is warranted, as well as consideration of measures to avoid and minimize such events.

Given the Corps' determination to review and authorize the projects separately, according to the aforementioned permitting vehicles, the Service recommends that the attached best management practices (BMPs) be required for both authorizations, with the added condition that construction be held in abeyance until an appropriate biosecurity plan, with the Service's concurrence, is developed and implemented. We recommend requiring this condition to ensure the spread of invasive algae to the nearshore aquatic environment is avoided and minimized to the maximum extent practical. As noted previously, we recommend that environmental effects of these actions be considered in the context of the entire Kaelepulu ecosystem, not exclusively at single discrete project sites.

**Recommendations for additional information and actions to reduce risk**

We recommend the applicant obtain information on the pond's algal biomass that might provide insight to the seasonality or periodicity of algae biomass accumulation and blooms. The benefit of this information would be to help identify if it would be safer to conduct the activity in the early part of a natural biomass reduction cycle. A better understanding of the relative abundance and distribution of algae in the pond could also be useful to determine if it would be prudent to conduct mechanical removal to reduce the predominance of the invasive algae biomass prior to further dredging or clearing of channels that would provide pathways for the movement of invasive species. Reducing the biomass as much as possible prior to the activity (with particular attention to BMP number 1) could reduce the associated invasive species that could be flushed from the pond and could minimize the possibility of spreading a large amount of algal biomass in a short time period. Furthermore, if the flushing (increased tidal/water circulation) works to minimize the nutrient loading in the pond as anticipated, the periodic bloom may be reduced, therefore, decreasing the risk of cumulative pulses of algae from the pond over time. Although we do not have sufficient information at this time to predict this outcome, we recommend actions to reduce biomass prior to the start of dredging activities to minimize the risk of spread in the short term.

Although there is not a susceptible reef directly seaward of the dredging site for the sand plug at the mouth of the stream, long shore currents could move invasive species toward nearby existing reef. We are also aware that the habitat at the mouth is predominately sandy, with high tidal energy and water circulation, which would not present optimal conditions for the establishment of certain invasive algae that commonly afflict reefs in the area. However, *G. salicornia* does establish itself very readily in sandy habitats, possibly better than in hard bottom habitats. In addition, *G. salicornia* can form mats and tumbleweeds in such sandy areas, and we believe that

*G. tikvahiae* (the predominant algae in the ponds) can demonstrate similar growth characteristics. It is acknowledged that in areas that have increased water motion, such as the shallow section of the bay, algae is prevented from forming large mats and that the eventual outcome of a large pulse of these species of algae onto nearby reef and sand flats is unknown. In light of this, uncertainty, we recommend mitigative measures to reduce this potential threat.

Increased water circulation in the pond is anticipated to have long-term benefits to the aquatic habitat. However, given past experience on windward Oahu, we recommend risks should not be taken with invasive algae in the genus *Gracilaria,* nor should risks be taken with a species like *G.tikvahiae* that is currently not widespread and could be prevented from spreading with appropriate attention. In summary, although the risks may be perceived to be small, without additional information, the risk determination is simply a guess, and prevention would be more cost effective and result in better long term environmental benefit.

Finally, we are also concerned with invasive species in general in the Kaelepulu Pond system. When an activity occurs that may fundamentally change the system, this can open up opportunities for new invasive species to establish and become a problem. To address the *Gracilaria* as well as broader invasive species concerns, we recommend the applicant develop a biological security plan, and/or a Hazard Analysis Critical Control Point (HACCP) plan for the proposed dredging and maintenance activities and for future management of the area.

Thank you for the opportunity to review and comment on the project. In addition, we concur with the Corps determination that the proposed actions may affect but are not likely to affect endangered Hawaiian waterbirds, provided the avoidance and minimization measures developed through coordination with the Service, are required permit conditions on both authorizations. We look forward to continued coordination regarding the conservation of trust resources. If you have any questions, please call Tony Montgomery at 808-792-9400 or contact him by email at Tony_Montgomery@fws.gov.

Sincerely,

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Loyal Mehrhoff
Field Supervisor

Enclosure

**U.S. Fish and Wildlife Service**
**Recommended Standard Best Management Practices**

The U.S. Fish and Wildlife Service recommends that the measures below be incorporated into projects to minimize the degradation of water quality and minimize the impacts to fish and wildlife resources.

1. No contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of adjacent habitats (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests, etc.) shall result from project-related activities. This shall be accomplished by implementing a litter-control plan and developing a Hazard Analysis and Critical Control Point Plan (HACCP – see http://www.haccp-nrm.org/Wizard/default.asp) to prevent attraction and introduction of non-native species.

2. Turbidity and siltation from project-related work shall be minimized and contained within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.

3. Dredging/filling in the marine environment shall be scheduled to avoid coral spawning and recruitment periods and sea turtle nesting and hatching periods.

4. Dredging and filling in the marine/aquatic environment shall be designed to avoid or minimize the loss special aquatic site habitat (beaches, coral reefs, wetlands, etc.) and the function of such habitat shall be replaced.

5. All project-related materials and equipment (dredges, barges, backhoes, etc.) to be placed in the water shall be cleaned of pollutants prior to use.

6. No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.

7. All debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site.

8. Fueling of project-related vehicles and equipment should take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases.

9. Any under-layer fills used in the project shall be protected from erosion with stones (or core-loc units) as soon after placement as practicable.

10. Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).